



# RESEARCH2REALITY

Shining a light on research & innovation.

## The Tiniest Spaces Could Make the Biggest Impact

An interview with **George Sawatzky**, Professor, UBC Physics & Astronomy  
Founder, Stewart Blusson Quantum Matter Institute

I'm very much interested in developing ideas for new experimental methods to study materials and their atomic properties, on a length scale which is of the size of an atom, because that's basically what we're getting down to. And also developing the theoretical understanding of what you're actually measuring. Those experimental techniques are not simple. They require a very deep level of quantum mechanical understanding to relate what you're seeing to what the actual properties of the material really are.

### What is an example of discovery through your research?

I'm particularly excited about the idea of being able to measure the motion of electrons in a solid, deep below its surface — in other words, at an interface between two different materials. The idea was that if you took two materials and put them together, that the interface itself could have a very different property than either of the two materials, and that interface region could only be very, very thin. And that has turned out to be correct. And that really is important for development of electronic devices of the future.